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Theory and Simulation of Parametric Instabilities in Turbulent Plasmas Illuminated by Lasers with Spatial Structure* BEDROS B. AFEYAN, *Lawrence Livermore National Laboratory*, ALBERT E. CHOU, *Univ. California, Los Angeles* — SOFT-STEP simulations of high frequency parametric instabilities in spatially nonuniform plasmas illuminated by multiple RPP beams is reported. Particular attention is given to the reflectivity of stimulated Raman scattering (SRS) and its saturation. The study of parametric interactions in multidimensional plasmas, illuminated by multiple laser beams are the goals of SOFTSTEP codes, especially as they reflect on conditions that will exist in the plasmas of NIF gas-filled hohlraums.

SOFTSTEP codes are pseudo-spectral and rely on operator splitting techniques and exact propagators for each split step. A filamenting pump model including propagation up to and reflection from a critical layer as well as pump depletion are easily included in the SOFTSTEP algorithm.

☐ Prefer Oral Session
☒ Prefer Poster Session

Bedros B. Afeyan
bedros@llnl.gov
Lawrence Livermore National Laboratory

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